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EXAMINER

LEE, CHEUKFAN

ART UNIT PAPER NUMBER

2627

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/064,700	Applicant(s) TSENG, WEN-CHAO	
	Examiner Cheukfan Lee	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,8-10,12-14,16-19 and 21-27 is/are rejected.
- 7) ☒ Claim(s) 2,3,7,11,15,20 and 28-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. Claims 1-34 are pending. Claims 1, 14, 23, 28, and 32 are independent.

2. The disclosure is objected to because of the following informalities:

Page 3, line of section 0012, "facing" should read – is facing --;

Page 6, line 12 of section 0028, "detected" should read – being detected --; and

Page 8, Table 1, "Sensor 230" is not at the correct location.

Appropriate correction is required.

3. Claims 10-34 are objected to because of the following:

In claim 10, lines 3 and 5, "can be" should be changed to – is – since "can be" does not mean that the document is actually detected but just "can be" detected.

In claims 11 and 12, the dependency on "claim 8" should be changed to – claim 10 – or any claim depending on claim 10, or else the term "first and second sensor" lacks antecedent basis.

In claim 11, line 3, "to be scanned" should read – is to be scanned --.

In claim 13, the dependency on "claim 10" should be changed to – claim 11 – to eliminate the lack of antecedent basis.

Still in claim 13, line 3, "the first and second sensor" should read – the first and second sensors --.

In claim 14, line 9, "channel" should read – channels --.

In claim 15, line 2, "can be" should be changed to – is – since "can be" does not mean that the apparatus is actually driven but only "can be" driven.

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In claim 20, line 3, "paper turning channel" should read – paper turning region – in order to refer to the basis of the term set forth on line 8 of claim 14.

Still in claim 20, line 3, "perform" should be changed to a more appropriate term, such as -- activating --, to describe the function of the first and second sensors because the sensors do not perform single-side scanning or double-side scanning; the sensors only activate scanning and/or assist in scanning.

Claims 16-22 are objected to as being dependent upon objected claim 14.

In claim 23, line 8 of the claim, "until the second side of the document facing" should read "until the second side of the document is facing".

In claim 24, line 1, "a step adjusting" should read – a step of adjusting --.

Claims 24-27 are objected to as being dependent upon objected base claim 23.

In claim 28, lines 11 and 17, "adjusting a light source incident onto ..." should be amended to read correctly because "a light source" as defined in the specification does not incident onto the first side or the second side, but light does. One suggestion is to amend the phrase to read – adjust a light source that emits light onto ...".

Claims 29-31 are objected to as being dependent upon objected claim 28.

In claim 32, line 11 of the claim, "a the" should be changed to – a --.

Claims 33 and 34 are objected to as being dependent upon objected claim 32.

4. The specification is objected to because of the following:

The specification does not provide adequate support for subject matter claimed in claims 12 and 13 (which is understood to depend on claim 12) to enable one skill in the art to make and use the invention.

The specification, while being descriptive of using a signal generated by the sensors (230 and 240) (first sensor and second sensor in claim 12) to activate the image extraction apparatus or other apparatuses, is not descriptive of the sensors in electrical or optical communication with the image extraction apparatus to transmit a signal carrying image information of the first and second sides of the document to the image extraction apparatus. See page 6, paragraph 0028, page 9, paragraph 0031, pages 9-10, paragraph 0033, page 11, paragraph 0039, and page 13, paragraph 0050. The specification provides no description on the sensors (230 and 240) that are in electrical communication with the image extraction apparatus, and no description on the sensors that are in optical communication with the image extraction apparatus. It is unknown how the sensors, that are in electrical communication with the image extraction apparatus, generate signals carrying image information of a side of the document. It is also unknown how the sensors, that are in optical communication with the image extraction apparatus, generate signals carrying image information of a side of the document.

5. Claims 12 and 13, as understood to depend on claims 10 and 12, respectively, are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for using signals generated by the sensors (230 and 240) to activate the

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image extraction apparatus (or other apparatuses or device), does not reasonably provide enablement for how the sensors (230 and 240) are in electrical or optical communication with the image extraction apparatus to transmit signals carrying image information of the first and second sides of the document to the image extraction apparatus. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Please refer to the objection of the specification.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 4, 9, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoffel (U.S. Patent No. 4,536,077).

Regarding claim 1, Stoffel discloses a double-side image scanner module (Fig. 1) for scanning a document (27) having a first side (the lower side as viewed when the document 27 is in tray 75 in Fig. 1) and an opposing second side (the upper side as viewed when the document 27 is in tray 75). The scanner module (Fig. 1) comprises a paper feeder (in Fig. 1), which comprises a paper-feeding through-channel (50), through which the document is transmitted. The paper-feeding through channel (50) comprises

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a first-side scanning region (scan station 52) for scanning the first side (the lower side when the document 27 is tray 75) of the document (27), a second-side scanning region (scan station 54), aligned with the first-side scanning region (52) (with respect to the feeding path 50, see explanation below) for scanning the second side (the upper side when in the document tray 75) of the document (27), and a paper-turning region (inverting section 61 of 50 in Fig. 1), between the first-side scanning region (52) and the second-side scanning region (54), through which the document (27) is turned up side down, a plurality of document transmission members (65, 68, 69, 80) along the paper-feeding through-channel (50) for transmitting the document (27), and one image extraction apparatus (scanning carriage 14 in Fig. 1), aligned with both the first-side scanning region (52) and the second-side scanning region (54) to extract images of the first and second sides of the document (27) through the first and second side scanning regions (52 and 54), respectively (col. 4, lines 21-27, col. 2, line 24 – col. 3, line 58, col. 5, lines 8-49).

Further, with regard to the claim limitation “a second-side scanning region, aligned with the first-side scanning region”, the definition of “align” is “to be in or come into precise adjustment or correct relative position” (Webster’s Ninth New Collegiate Dictionary). The first-side scanning region (52) of Stoffel is in correct relative position with the second-side scanning region (54) with respect to the paper-feeding through-channel (or path) (50).

Regarding claim 4, the image extraction apparatus (14), including an image sensor array (30), is moveable, from the dotted line position to the solid line position in Fig. 1, to obtain a constant distance to the first-side scanning region (52) and to the second-side scanning region (54) from the image sensor array (30) (col. 5, lines 8-17 and col. 3, lines 40-42, which section is depended upon by the double-side scanning mode—MODE II, according to col. 5, lines 8-17). Please note that at this solid line position of the image extraction apparatus (14), the distance (optical path length) from the first-side scanning station (52) to the image sensor array (30) is constant and the distance (optical path length) from the second-side scanning station (54) to the image sensor array (30) is constant, and both distances are shown to be substantially the same (Fig. 1). Therefore, the claim limitation of claim 4 is met.

Regarding claim 9, the transmission members include a plurality of rollers (65, 68, 69, and 80) (Fig. 1).

Regarding claim 23, Stoffel disclose a scanning method for a double-side image scanner module (Fig. 1) for scanning a document (27) having a first side (lower side as viewed when the document 27 is in tray 75 in Fig. 1) and a second side (upper side as viewed when the document 27 is in tray 75). The method comprises feeding the document (27) into a paper-feeding through-channel (50) of the double-side image scanner module with the first side (the lower side when in tray 75) facing an image extraction apparatus (14) while passing over a light transparent channel (channel

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between 85 and 86 in Fig. 1), scanning the image of the first side (lower side when in tray 75) by the image extraction apparatus (14), transmitting the document (27) along the paper-feeding through-channel (50) until the second side (upper side when in tray 75) of the document (27) is facing the image extraction apparatus (14) while passing over the light transparent channel (channel between 85 and 86) at a different height (height at 86), and scanning the image of the second side (upper side when in tray 75) by the image extraction apparatus (14).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel (U.S. Patent No. 4,536,077).

Regarding claim 5, Fig. 1 of Stoffel discussed for claim 1 above shows a distance between the first-side scanning region (52) and the second-side scanning region (54) less than the length of the document (27 in tray 75). However, it would have been a matter of design choice to have the distance between the two scanning regions (52 and 54) no less than the length of the document (27) to leave more space in the vertical direction to allow easy access to the space for maintenance of the light sources (90s, 91s), provided that the vertical position of the image extraction apparatus (14) allows

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the distance between the first-side scanning region (52) and the image sensor array (30) and the distance between the second-side scanning region (54) to be maintained substantially the same with respect to each other, which is advantage is recognized by one of ordinary skill in the art.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel (U.S. Patent No. 4,536,077) in view Kao (U.S. Patent No. 6,721,074).

Regarding claim 6, Fig. 1 of Stoffel, discussed for claim 1 (and claim 5) above, shows that the paper-turning channel (inverting section 61 of 50 in Fig. 1) is at least as long as the length of the document (27 in tray 75). But because Stoffel does not show or disclose a roller(s) disposed in the paper-turning channel to ensure the document (27) is fed through the paper-turning channel properly when the length of the channel is no less than the document length, Kao is introduced. Kao discloses a double-side scanner module comprising two scanning regions (21 and 24 in Fig. 2) for scanning both sides of a document, respectively, and a paper-turning channel between the two scanning stations (21 and 24), the channel having a roller for transmitting (transporting) the document (col. 2, lines 59-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Stoffel with a roller at the paper-turning channel to ensure proper transporting of the document to the second-side scanning region (54) as taught by Kao.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel (U.S. Patent No. 4,536,077) in view of Maciey et al. (U.S. Patent No. 6,552,829).

Regarding claim 8, Stoffel is discussed above for claim 1. For the purpose of this rejection, the image extraction apparatus of Stoffel is interpreted to include the scanning carriage (14 in Fig. 1), the light source (41s), and the light source (90s), since the claim does not define the structure of the image extraction apparatus (for example, having a housing or casing of a certain structural shape and having its components there within).

Stoffel does not disclose that any one of the light sources (the one containing 41s or the one containing 90s) is an adjustable light source allowing images of both the first and second sides of the document extracted by the image extraction apparatus with identical quality. However, the concept of adjusting a light source to produce uniform light output allowing images of both a first and second sides of a document being scanned (extracted) with identical quality is taught by Maciey (Fig. 3, col. 15, line 3 – col. 16, line 60). In a calibration process, the light sources for illuminating both sides of the document (light source (40a and 41a) for upper side of the document and light source (40b and 41b) for lower side) are adjusted to produce uniform light output allowing images of both sides of the document detected by image sensors (CCD arrays) to have identical quality. Although the light sources being adjusted in the exemplary embodiment(s) are LEDs (light-emitting diodes), Maciey states that “various light sources other than LEDs could be used (col. 15, lines 4-5). One of ordinary skill in the art would have understood that the “various light sources” for an image scanner include light sources such as the lamp tubes (41s and 90s) of Stoffel (Fig. 1). Using the

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concept of Maciey, one of ordinary skill in the art would have known how to adjust the light sources (lamp tubes) by calibrating the light sources. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concept of Maciey to employ adjustable light sources as the light sources (41s and 90s) of the apparatus of Stoffel for producing uniform light output for both sides of the document (27), as taught by Maciey, allowing images of the first and second sides of the document extracted (detected) by the image extraction apparatus (14, 41s and 90s) of Stoffel to have identical quality.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel (U.S. Patent No. 4,536,077) in view Kao (U.S. Patent No. 6,563,611).

Regarding claim 10, Stoffel further discloses a document edge sensor (127 in Fig. 4) so located that the document entering the second-side scanning region (54) is detected (col. 5, lines 30-35).

Stoffel does not explicitly disclose a document (edge sensor) so located that the document (27) entering the first-side scanning region (52) is detected.

Kao discloses a double side scanner having a document edge sensor (28) disposed upstream of a roller (25) located at the scanning region (26) (Fig. 2, col. 3, lines 15-25). When the document sensor (28) detects an end of an incoming original, the document sensor (28) sends a control signal to the roller (25) for reversing the direction of its rotation to rotate and guide the document through the scanning region (26). Please note that the reversing of the roller (25) includes stopping the roller at one

point of time and starting to rotate in a counterclockwise direction opposite from its original rotation direction, which means that the roller starts to rotate in the counterclockwise direction in response to the sensor (28) detecting the document (edge).

Both Kao and Stoffel employ a roller (roller 25 of Kao, roller 68 of Stoffel) at the scanning region (region 26 of Kao, region 68 of Stoffel) for transmitting/guiding the document pass between the roller and the scanning region, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Stoffel with a document (edge) sensor at about the document inlet just to the right of the roller (80) to detect the document (27), and modify the control (100, col. 4, lines 49-57) of Stoffel such that the roller (68) at the first-side scanning region (52) starts to rotate in the counterclockwise direction in response to a detection signal from the document (edge) sensor, in order to reduce power consumption as compared to a case that the roller (68) is driven even before the document (27) enters the feeding channel (60 of 50).

13. Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel (U.S. Patent No. 4,536,077) in view of Tang (U.S. Patent No. 6,507,416).

Regarding claims 24 and 26, Stoffel discussed above for claim 23 further discloses a light source (any one of 41) of the image extraction apparatus (14 in Fig. 1) but does not disclose the step of adjusting a light source of the image extraction apparatus (14).

Tang discloses a method of adjusting a light source of a scanning module (5) of an original image scanner (Figs. 6A and 6B). A light source adjuster (729) adjusts the light source (721) of the scanning module (5) by moving a light source (721) up or down to change the distance between the lamp tube (7212) of the light source (721) and the document (2) for different degree of brightness to illuminate the document (2) (col. 3, lines 52-61).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Stoffel with the step of adjusting, by a light source adjuster, the (vertical) distance between the light source (one of 41 in Fig. 1) of the image extraction apparatus (14) of Stoffel and the document (27) before scanning the first side of the document (27) for different degree of brightness at the document as taught by Tang.

Regarding claims 25 and 27, since Stoffel's image extraction apparatus (14 in Fig. 1) has two light sources (41 and 41), one (41) being the light source discussed above for claim 24, one of ordinary skill in the art would have realized the benefit of having both the light sources adjusted for the same degree of brightness. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Stoffel with the step of adjusting, by a light source adjuster, the (vertical) distance between the other light source (41) of the image extraction apparatus (14) of Stoffel and the document (27) as well before scanning the second side of the

document, as taught by Tang, for the same degree of brightness. Please refer to the discussion for claims 24 and 26.

14. Claims 14, 16-19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel (U.S. Patent No. 4,536,077) in view of Hasegawa et al. (U.S. Patent No. 6,678,076).

Regarding claim 14, Stoffel discloses a double-side image scanner module (Fig. 1), comprising a paper feeder (in Fig. 1), which comprises a first paper-transmission channel (60), from which a document (27) is fed with a first side thereof facing downwardly; a second paper-transmission channel (63), disposed below the first paper-transmission channel (60), from which the document (27) is discharged with a second side thereof facing downwardly, a paper-turning region (61), connected between the first and second paper-transmission channels (60 and 63) to transmit the document from the first paper-transmission channel (61) to the second paper-transmission channel (63), and a plurality transmission member (65, 68, 69, and 80) installed along the first paper-transmission channel (60), the paper-turning region (61) and the second paper-transmission channel (63) for transmitting the document (27). The scanner module (Fig. 1) further comprises an image extraction apparatus (14, 41s and 90s), to extract images of the first and second sides of the document (27), and a light transparent channel (the channel from 85 and passing 86 to the image extraction apparatus carriage 14), perpendicular to the second paper-transmission channel (63), extending between the first paper-transmission channel (60, including where 85 is) and the image extraction

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apparatus (the scanner carriage 14) (col. 4, lines 21-27, col. 2, line 24 – col. 3, line 58, col. 5, lines 8-49).

Stoffel differs from the claimed invention in that 1) the second paper-transmission channel (63) is not parallel to the first paper-transmission channel (60), and 2) the light transparent channel (channel from 85 and passing 86 to carriage 14) is not perpendicular to both the first and second paper-transmission channels. However, the light transparent channel of Stoffel is perpendicular to the second paper-transmission channel.

With regard to the difference 1), although the first paper-transmission channel (60) of Stoffel is not parallel to the second paper-transmission channel (63), which is horizontally positioned (Fig. 1), the first paper-transmission channel (60) is arranged at only a small acute angle from the horizontal direction. However, the double-side document scanner comprising a document feeder (Fig. 2) that has a first paper-transmission channel (upper paper-transmission channel before the document inverting region) parallel to a second paper-transmission channel (lower paper-transmission channel after the document inverting region) is taught by Hasegawa et al. (Fig. 2, col. 6, lines 5-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the first paper-transmission channel (60) of Stoffel positioned horizontally so that the channel (60) is parallel to the second channel (63 in Fig. 1), as taught by Hasegawa et al., to provide more space underneath the first paper-transmission channel (60) allowing easy access to the space for purposes including

maintenance of parts (81, 79, 80, 91, 91, etc. in Fig. 1 of Stoffel), provided that the upper part of paper transmission channel (64 in Fig. 1) is extended vertically to accommodate part (76) thereunder.

With regard to the difference 2) that the light transparent channel (channel from 85, passing 86 and to carriage 14) is not perpendicular to both the first and second paper-transmission channels but only perpendicular to the second paper-transmission channel (63), because of the arrangement of the first paper-transmission channel and the second paper-transmission channel of the obvious scanner module of Stoffel in view of Hasegawa et al. discussed above with regard to the difference 1), the light transparent channel (the channel from 85, passing 86 and to carriage 14 in Fig. 1 of Stoffel) is automatically placed in an arrangement as claimed, i.e., perpendicular to both the first and second paper-transmission channels.

Regarding claim 16, the image extraction apparatus (14), including an image sensor array (30), is moveable, from the dotted line position to the solid line position in Fig. 1, to obtain a constant distance to the first-side scanning region (52) and to the second-side scanning region (54) from the image sensor array (30) (col. 5, lines 8-17 and col. 3, lines 40-42, which section is depended upon by the double-side scanning mode—MODE II, according to col. 5, lines 8-17). Please note that at this solid line position of the image extraction apparatus (14), the distance (optical path length) from the first-side scanning station (52) to the image sensor array (30) is constant and the distance (optical path length) from the second-side scanning station (54) to the image

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sensor array (30) is constant, and both distances are shown to be substantially the same (Fig. 1). Therefore, the claim limitation of claim 16 is met.

Regarding claim 17, Stoffel further discloses a plurality of rollers (65, 68, 69, and 80) in the paper feeder (in Fig. 1) to transmit the document (72).

Regarding claim 18, based on the discussion and reasons of obviousness for claim 14, the paper turning channel (61 of Stoffel) of the scanner module of Stoffel in view of Hasegawa et al. is substantially perpendicular to both the first and the second paper-transmission channels. Please refer to the discussion for claim 14.

Regarding claim 19, the first paper transmission channel (60) is positioned above the second paper-transmission channel (3) (see Fig. 1 of Stoffel and discussion for claim 14).

Regarding claim 22, the first paper-transmission channel, the paper-turning channel (61 of Stoffel), and the second paper-transmission channel (63 of Stoffel) of scanner of Stoffel in view of Hasegawa et al., discussed above for claim 14, construct a U-shaped paper-feeding through-channel. Please refer to the discussion for claim 14.

15. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel (U.S. Patent No. 4,536,077) in view of Hasegawa et al. (U.S. Patent No. 6,678,076) as applied to claim 14 above, and further in view of Maciey et al. (U.S. Patent No.).

Regarding claim 21, Stoffel in view of Hasegawa et al. is discussed above for claim 14. The image extraction apparatus (of Stoffel) includes the scanning carriage (14 in Fig. 1), the light source (41s), and the light source (90s), which apparatus meets the claimed image extraction apparatus since the claim does not define the structure of the image extraction apparatus (for example, having a housing or casing of a certain structural shape and having its components there within).

Stoffel does not disclose that any one of the light sources (the one containing 41s or the one containing 90s) is an adjustable light source allowing images of both the first and second sides of the document extracted by the image extraction apparatus with identical quality. However, the concept of adjusting a light source to produce uniform light output allowing images of both a first and second sides of a document being scanned (extracted) to have identical quality is taught by Maciey (Fig. 3, col. 15, line 3 – col. 16, line 60). In a calibration process, the light sources for illuminating both sides of the document (light source (40a and 41a) for upper side of the document and light source (40b and 41b) for lower side) are adjusted to produce uniform light output allowing images of both sides of the document detected by image sensors (CCD arrays) to have identical quality. Although the light sources being adjusted in the exemplary embodiment(s) are LEDs (light-emitting diodes), Maciey states that “various light sources other than LEDs could be used (col. 15, lines 4-5). One of ordinary skill in the

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art would have understood that the "various light sources" for an image scanner include light sources such as the lamp tubes (41s and 90s) of Stoffel (Fig. 1). Using the concept of Maciey, one of ordinary skill in the art would have known how to adjust the light sources (lamp tubes) by calibrating the light sources. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concept of Maciey to employ adjustable light sources as the light sources (41s and 90s) of the apparatus of Stoffel in view of Hasegawa et al. for producing uniform light output for both sides of the document (27), as taught by Maciey, allowing images of the first and second sides of the document extracted (detected) by the image extraction apparatus (14, 41s and 90s) of Stoffel in view of Hasegawa et al. to have identical quality.

16. Claims 2, 3, 7, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claims 11 and 20 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

18. Claims 28-34 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

19. The following is an examiner's statement of reasons for allowance:

Claim 2 would be allowable because the closest prior art Stoffel (U.S. Patent No. 4,536,077) requires not "a light transparent channel" as claimed but two light-transmitting channels from both the first- and second-side scanning regions (52 and 54) to the image extraction apparatus (14). In claim 2, "a light channel" is from both the first- and second-side scanning regions to the image extraction apparatus, allowing light to travel between the image extraction apparatus (14) and the first and second sides of the document (27) located at the first- and second-side scanning regions, respectively.

Claim 3 depends on claim 2.

Claim 7 would be allowable because the closest prior art Stoffel (4,536,077) does not disclose that the image extraction apparatus (14 in Fig. 1) includes a light source adjustable according to images of the first and second sides of the document. Interpreting the light source (containing 90s) to be part of the image extraction apparatus (14, 41s and 90s) (see Fig. 5), the image extraction apparatus (14, 41s and 90s) of Stoffel has two light sources (one containing 41s and the other containing 90s Fig. 1), instead of "a light source". Any one of the light sources (that containing 41s and that containing 90s) is not disclosed to be adjustable according to images of both the first and second sides of the document (27).

Claim 11 would be allowable over the prior art of record. Claim 11 requires that the first and second sensors are switched on/off manually to determine which side of

the document is to be scanned. In the closest prior art Stoffel (U.S. Patent No. 4,536,077), the second sensor (127 in Fig. 4) located at the document entering side of the second scanning region (54) is not manually switched on/off but is controlled by the controller (100) when mode II is selected in which both sides of the document are read (col. 5, lines 17-19, col. 3, lines 8-12). Stoffel states that in mode I, the one side mode, the scanning region (station) (54), with which the document sensor (127) is associated, is inoperative (col. 4, line 7). Stoffel and Kao (U.S. Patent No. 6,563,611) do not disclose manually switching on/off to determine which side of the document is to be scanned. Stoffel and Kao (6,563,611) were applied in the rejection of claim 10 upon which claim 11 depends.

Claim 15 would be allowable because the image extraction apparatus (14, 41s and 90s) of the closest prior art Stoffel (4,536,077) is not driven to enter the light transparent channel (from 85, pass 86 and to 14 in Fig. 1) immediately under the first-side scanning region (52).

Claim 20 would be allowable because the obvious scanner of the closest prior art Stoffel (4,536,077) in view of Hasegawa et al. (6,678,076) does not have a second sensor located at the paper-turning region (61 in Fig. 1 of Stoffel), in addition to the first sensor (the obvious sensor discussed for claim 14) located at the first paper-transmission channel (60 of Stoffel), both the first and second sensors for selectively

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activating single-side scanning between the first and the second sides or double-side scanning.

Independent claim 28 requires, in a scanning method for a double-side image scanner module having an image extraction apparatus for scanning images on both sides of a document, determining whether the first side is to be scanned, adjusting a light source that emits light onto the first side when the first side is to be scanned to obtain an image thereof, transmitting the document through the paper-turning region and turning the document with the second side facing the image extraction apparatus while passing over the light transparent channel at a different height, determining whether the second side is to be scanned, and adjust the light source that emits light onto the second side when the second side is to be scanned to obtain an image thereof. These steps in combination with the structural relationship between the first paper-transmission region, the paper-turning region, the second paper-transmission region, the light transparent channel, and the image extraction apparatus described in the claim are not taught by the prior art of record, including the closest prior art Stoffel (4,536,077), alone or in combination.

Claims 29-31 depend on claim 28.

Independent claim 32 claims a method similar to that of claim 28, except that the adjusting steps of claim 32 are adjusting the distance between the image extraction apparatus and the first side, or the second side, of the document. Specifically, claim 32

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requires, in a scanning method for a double-side image scanner module having an image extraction apparatus for scanning images on both sides of a document, determining whether the first side is to be scanned, adjusting a distance between the image extraction apparatus and the first side when the first side is to be scanned to obtain an image thereof, transmitting the document through the paper-turning region and turning the document with the second side facing the image extraction apparatus while passing over the light transparent channel at a different height, adjusting the distance between the image extraction apparatus and the second side when the second side is to be scanned to obtain an image thereof. These steps in combination with the structural relationship between the first paper-transmission region, the paper-turning region, the second paper-transmission region, the light transparent channel, and the image extraction apparatus are not taught by the prior art of record, including the closest prior art Stoffel (4,536,077), alone or in combination.

Claims 33 and 34 depend on claim 32.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Acquaviva et al. (U.S. Patent No. 5,760,919), "Duplex documents scanner with alternating scan lines from dual imaging stations"

Acquaviva et al. (U.S. Patent No. 5,689,792), "Simplified and higher productivity duplex document scanning system"

Acquaviva et al. (U.S. Patent No. 5,463,451), "Document reproduction system including a duplex document handler with natural inversion"

Hasegawa et al. (U.S. Patent No. 6,438,350), "Image reading apparatus and image forming apparatus"

Corby et al. (U.S. Patent No. 6,785,024), "Digital scanner"

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (571) 272-7407. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheukfan Lee
January 3, 2006



Cheukfan Lee